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IS 7514 (1994): Grease, Low temperature [PCD 3: Petroleum, Lubricants and their Related Products]

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ग्रीस, निम्न ताप — विशिष्टि

(पहला पुनरीक्षण)

Indian Standard

GREASE, LOW TEMPERATURE — SPECIFICATION

(First Revision)

UDC 621·892·095·2

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

July 1994

Price Group 1

Lubricants and Related Products Sectional Committee, PCD 4

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Lubricants and Related Products Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

This standard was first published in 1974 based on the U.K. Defence Specification, DEF 2221-A 'Grease LG-380', considering the substantial demand for low temperature grease in the country. The present revision has been prepared as the result of a review of the standard by the Technical Committee in the light of present day requirements and advancements in the field of lubrication technology in the country. In this revised version an additional test, namely low temperature torque at −40°C, has been introduced keeping in view the requirements of the heavy metal industries.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

GREASE, LOW TEMPERATURE — SPECIFICATION

(First Revision)

1 SCOPE

This standard prescribes the requirements and the methods of sampling and test for low temperature grease intended for use as a general purpose lubricant in cold climates, including the lubrication of chassis and of low speed ball-bearings.

2 NORMATIVE REFERENCES

The following Indian Standards contain provisions which through reference in this text constitute the provisions of the standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
1447 (Part 3) : 1992	Petroleum and its products— Methods of sampling : Part 3 Methods of sampling of semi-solid and solid petroleum products (*first revision*)
1448	Methods of test for petroleum and its products

3 REQUIREMENTS

3.1 General

The material shall be uniform, homogeneous in consistency and free from objectionable odour, deleterious materials and other impurities, such as rosin, rosinates, tar oil, grit and fillers of any description.

3.2 Composition

The material shall be prepared from refined mineral lubricating oil and suitable water insoluble soaps.

3.2.1 The mineral oil extracted from the grease by method A prescribed in P : 59 of IS 1448 shall comply with the following requirements:

	Requirement	*Method of Test Ref to 'P' Series of IS 1448*
i) Kinematic viscosity in centistrokes at 40°C, *Min*	13	P : 25
ii) Flash point °C, Cleveland open cup, *Min*	150	P : 69

3.3 The material shall also comply with the requirements given in Table 1, when tested according to the methods given in 'P' series of IS 1448. Reference to the relevant method is given in col 4 of Table 1.

3.4 Keeping Quality

The keeping quality of the material shall be such that when stored in original sealed containers under normal conditions, it shall retain the properties detailed in the specification for not less than one year from the date of manufacture.

4 PACKING AND MARKING

4.1 Packing

The material shall be packed in sound, clean, dry, leak-proof tin-plate containers free from rust.

4.2 Marking

The containers shall be securely closed and marked with the following:

a) Indication of the source of manufacture;
b) Name of the material;
c) Net mass in the container;
d) Recognized trade-mark, if any;
e) Date of manufacture; and
f) Batch number or code number.

4.3 BIS Certification Marking

The container may also be marked with the Standard Mark.

4.3.1 The use of the Standard Mark is governed by the provisions of *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of the conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

Table 1 Requirements for Grease, Low Temperature
(*Clause* 3.3)

Sl No. (1)	Characteristics (2)	Requirement (3)	Method of Test, Ref to 'P' Series of IS 1448 (4)
i)	Drop point, °C, *Min*	90	P:52
ii)	Free acidity (as Oleic), percent by mass, *Max*	0.3	P:53
iii)	Free alkalinity [as $Ca(OH)_2$], percent by mass, *Max*	0.3	P:53
iv)	Sulphated ash, percent by mass, *Max*	5.0	P : 4
v)	Water content, percent by mass, *Max*	1.0	P : 40
vi)	Copper strip, corrosion at 25°C, 24 h	Negative	P : 51
vii)	Oil separation, percent by mass, *Max*	5.0	P : 85
viii)	Apparent viscosity, poises at −40°C, *Max*		P : *
	a) at a rate of shear 25 sec^{-1}	2 500	
	b) at a rate of shear 500 sec^{-1}	500	
ix)	Rust preventive properties	Not more than 2	P : †
x)	Low temperature torque at −40°C, 4·5 kg load, 1 h		P : ‡
	a) Starting torque, g-cm, *Max*	5 000	
	b) Running to, g-cm, *Max*	1 000	

*Under preparation. Till such time ASTM D 1092 shall be followed.

†Under preparation. Till such time ASTM D 1743 shall be followed.

‡Under preparation. Till such time IP 186/85 shall be followed.

5 SAMPLING

5.1 Representative samples of the material shall be drawn as prescribed in IS 1447 (Part 3) : 1992.

5.2 Number of Tests and Criteria for Conformity

5.2.1 Individual containers selected in **5.1** shall be opened and examined for the general requirements given in 3.1. Tests for consistency, free acidity and free alkalinity shall be conducted on individual samples. Tests for copper strip corrosion shall be conducted on two of the individual samples. Tests for keeping quality shall be conducted on one out of every 500 containers in the lot.

5.2.2 Tests for all the remaining characteristics shall be carried out on the composite sample prepared by mixing small portions from individual containers selected in the sample.

5.2.3 The lot shall be declared acceptable only if each of the test results obtained under 5.2.1 and **5.2.2** satisfies the relevant requirement.

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Amendments Issued Since Publication

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